

## ABSTRACT OF THE DISCLOSURE

A compact, lightweight, cost effective, self-contained standby electronic navigation system with high signal-to-noise ratio and good dynamic stability is provided.

- 5      The system includes a first sensor module for providing a plurality of rotational rate signals, a second sensor module for providing a plurality of compensation signals, and a microcontroller module for processing the rotational rate signals and the compensation signals and sending the signals to a display for displaying attitude information, directional information, and turn coordinate information on a single screen
- 10     simultaneously. In one embodiment, the first sensor module includes a plurality of rotational sensors made of piezoelectric elements. The piezoelectric elements are made from a single sheet of piezoelectric material so that the elements possess uniform characteristics, and are arranged to reduce systematic drift and random noise normally present in a rotational rate sensor. The sensors can be configured on a single multi-sensor chip.
- 15